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1040.01 General

Truck weighing facilities are needed to protect state highways from overweight vehicles, to provide for vehicle safety inspection, and to provide a source of data for planning and research. The development, construction, and maintenance of these facilities is a cooperative effort between the Washington State Department of Transportation (WSDOT) and the Washington State Patrol (WSP).

1040.02 Definitions

Commercial Vehicle Information Systems and Networks (CVISN) A network that links intelligent transportation systems (ITS) to share information on commercial vehicles. When in operation at a weigh site it can enable commercial vehicles to clear the facility without stopping.

decision sight distance The sight distance required for a driver to detect an unexpected or difficult-to-perceive information source or hazard, interpret the information, recognize the hazard, and select and complete an appropriate maneuver safely and efficiently.

functional classification The grouping of streets and highways according to the character of the service they are intended to provide. (See Chapter 440.)

frontage road An auxiliary road that is a local road or street located beside a highway for service to abutting property and adjacent areas and for control of access.

lane A strip of roadway used for a single line of vehicles.

median The portion of a divided highway separating the traveled ways for traffic in opposite directions.

outer separation The area between the outside edge of traveled way for through traffic and the nearest edge of traveled way of a frontage road.

roadway The portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways.

sight distance The length of roadway visible to the driver.

shoulder The portion of the roadway contiguous with the traveled way, primarily for accommodation of stopped vehicles, emergency use, lateral support of the traveled way, and use by pedestrians and bicycles.

static scale A scale that requires a vehicle to stop for weighing.

stopping sight distance The sight distance required to safely stop a vehicle traveling at design speed.

traveled way The portion of the roadway intended for the movement of vehicles, exclusive of shoulders and lanes for parking, turning, and storage for turning.

usable shoulder The width of the shoulder that can be used by a vehicle for stopping.

weigh in motion (WIM) A scale facility capable of weighing a vehicle without the vehicle stopping.

1040.03 Planning, Development, and Responsibilities

The WSP works with the WSDOT's Planning and Programming Service Center to develop a prioritized list of weigh facility needs for each biennium. The list includes:

- New permanent facilities
- New portable facilities
- New shoulder sites

- WIM equipment
- Vehicle inspection facilities
- Scale approach slab reconstruction

The WSP provides Program Management a project definition, that includes:

- A statement of need, the purpose of the project, and the type of work
- The general location of the project

Program Management sends this information to the region for preparation of a Project Summary. The region works with the WSP to identify the specific location of the facility, prepares a design decision estimate, and submits it to Program Management.

The region negotiates and the Regional Administrator executes any formal agreements with the WSP required for the design, construction, or maintenance of vehicle weighing and inspection facilities.

The Memorandum of Understanding Related to Vehicle weighing and Equipment Inspection Facilities on State Highways, Figure 1040-8, contains details about the various responsibilities of the WSDOT and the WSP.

1040.04 Permanent Facilities

Permanent truck weighing facilities have permanent scales and may have buildings. When these facilities are in operation, trucks are required stop. However, when Weigh In Motion (WIM) and Commercial Vehicle Information Systems and Networks (CVISN) capabilities have been installed, the driver may be notified to continue without stopping. The notification to continue may be through the use of signs or transponders.

(1) Site Locations

The exact location of a truck weighing facility is generally controlled by topography, highway alignment, and geometrics. It is also desirable to select a site where adequate right of way is already available. Select the most economical site to minimize site preparation, expense, or impact on the environment. Water, electricity availability, and sewage treatment and disposal are other considerations for site selection.

Locate the facility so that its operation will not hinder the operation of the highway or other related features such as intersections and interchanges.

To the extent possible, locate the facility to prevent truck traffic avoiding the facility on other roadways and the type and volume of truck traffic using the highway.

An Access Point Decision Report is required for weigh sites on multilane divided highways with access control. (See Chapter 1425.)

(2) Design Features

On multilane highways, provide standard off- and on-connections, as shown in Chapter 940. Figure 1040-1 is the minimal design of a weigh site on multilane highways.

Design weigh facilities on two-lane highways to best fit the existing conditions, with particular consideration given to the matter of access to and from the site. Standard off- and on-connections, as shown in Chapter 940, are preferred; however, with justification on-connections may be designed as intersections. (See Chapter 910.) Figure 1040-2 is a guide for the design of weigh sites on two-lane highways.

The following special design features apply:

- Level cement concrete approach slabs are required at both ends of the scales.

Asphalt concrete pavement approach slabs will be allowed only when adequate soil conditions exist, projected truck volume is light, and benefit/cost analysis justifies the use of asphalt concrete pavement based on the small percentage of time the scales will be in operation.

The approach slabs must be level and in the same plane as the scale.

- Provide adequate parking and storage to ensure that trucks do not impede the main-line through traffic. The WSDOT Regional Administrator and the WSP agree on the area to be provided.

- On multilane divided highways, install illuminated electronically controlled “open” and “closed” message signs that can be operated from the scale house or the control cabinet. Provide permanent signing for the facility, as requested by the WSP.
- The need for a vehicle safety inspection facility at any site is identified by the WSP. Figure 1040-3 is a guide for a site plan for a single bay vehicle inspection facility. Additional bays and site adaptation will be on a site by site basis. The WSDOT Regional Administrator and the WSP agree on the area to be provided.
- The need for some form of approach protective treatment for the scale house or a protective fence between the scale and roadway is identified by the WSP and agreed upon by the WSDOT Regional Administrator and the WSP. The need for the device is to protect the scale house from errant vehicles. See Chapter 700 for additional clear zone considerations.
- The need for WIM or CVISN capabilities is identified by the WSP. Design the in-place facilities to provide the ability to notify drivers whether to continue on or to stop for further investigation before they reach the exit for the static scale. The design is agreed upon by the WSDOT Regional Administrator and the WSP.
- Where WIM and CVISN are not included in the project, provide conduit for their future installation.
- With justification, at locations where space is limited, the depressed outer separation between the weigh facility and the through lanes may be replaced with concrete traffic barrier. (See Collector Distributor Outer Separations, Chapter 940.)
- Provide a clear view of the entire weigh site for the facility’s operator and the driver of an approaching vehicle.
- Asphalt concrete pavement is acceptable for use on the ramp and storage areas. Design the depth in accordance with the surfacing report.
- To optimize scale efficiency, make the storage area flat; however, to facilitate drainage, the slope may be up to 2%.
- Provide illumination when requested by the WSP. Illumination is required if the facility is to be operated during the hours of darkness and may be desirable at other locations to deter unauthorized use of the facility. See Chapter 840 for additional information on illumination.

1040.05 Portable Facilities

Portable truck weighing facilities have no permanent scales or buildings. When these facilities are in operation, they operate in the same manner as permanent facilities.

(1) Site Locations

Design portable truck weighing facilities located on two-lane and multilane roadways to best fit the existing conditions. Minor portable scale sites, as shown on Figure 1040-4, are used with two-way traffic and on multilane highways with low traffic volumes. Major portable scale sites, Figure 1040-5, are for use on expressways, freeways, and where traffic volumes are high.

Locate the weighing facility so that its operation will not hinder the operation of the highway or other related features such as an intersection.

An Access Point Decision Report is required for weigh sites on multilane divided highways with access control. (See Chapter 1425.)

(2) Design Features

The following special design features apply:

- Off- and on-connections, as shown in Figures 1040-4 and 5, are preferred; however, with justification on highways with no access control, on-connections may be designed as intersections. (See Chapter 910.)
- With justification, at locations where space is limited, the depressed outer separation between the weigh facility and the through lanes may be replaced with concrete traffic barrier. See the collector distributor outer separation figure in Chapter 940.

- Provide adequate parking and storage to ensure that trucks do not impede the main-line through traffic. The WSDOT Regional Administrator and the WSP agree on the area to be provided.
- Asphalt concrete pavement is acceptable for use on the ramp and storage areas. Design the depth in accordance with the surfacing report.
- To optimize portable scale efficiency, make the storage area flat; however, to facilitate drainage, the slope may be up to 2%.
- Provide permanent signing for the facility, as requested by the WSP.
- Provide illumination when requested by the WSP. Illumination is required if the facility is to be operated during the hours of darkness and may be desirable at other locations to deter unauthorized use of the facility. See Chapter 840 for additional information on illumination.

1040.06 Shoulder Sites

Shoulder sites are used by the WSP to pull a truck over for inspection and weighing with portable scales.

(1) Site Locations

Design shoulder sites to best fit the existing conditions. Small shoulder sites (Figure 1040-6) are for use on lower volume roadways (ADT 5,000 or less) with two-way traffic. Large shoulder sites (Figure 1040-7) are to be used with higher volume two-way roadways and multilane highways.

Locate the weighing facility so that its operation will not hinder the operation of the highway or other related features such as an intersection.

(2) Design Features

Shoulder sites are designed in coordination with the WSP. Input from the local WSP Commercial Vehicle Enforcement personnel will ensure that the proposed site will meet their needs without over-building the facility. Obtain written concurrence from the WSP for the length, width, and taper rates before the design is finalized.

When the ADT is 1,500 or less and with the written approval of the WSP, the tapers at small shoulder sites may be eliminated. The shoulders on either side of the site may be used as acceleration and deceleration lanes, whether or not they were designed for this use. Therefore, provide adequate strength to support truck traffic.

Asphalt concrete pavement is acceptable for use on all shoulder sites. Design the depth in accordance with the surfacing report. Design the shoulder pavement at this depth for a length not less than the deceleration lane length before, and the acceleration lane length after, the site (Chapter 940).

When the shoulders are designed to be used for deceleration and acceleration lanes, the minimum width is 12 ft with full pavement depth for the deceleration/acceleration lane lengths (Chapter 940).

Use a maximum of 2% slope in order to optimize portable scale efficiency and to facilitate drainage.

1040.07 Federal Participation

Federal funds appropriate to the system being improved may be used for the acquisition of right of way and the construction of truck weighing facilities and vehicle inspection facilities. This includes, but is not limited to on and off ramps, deceleration and acceleration lanes, passing lanes, driveways, parking areas, scale approach slabs, vehicle inspection facilities, roadway illumination, and signing.

1040.08 Procedures

Prepare site plans for all truck weigh facilities that include:

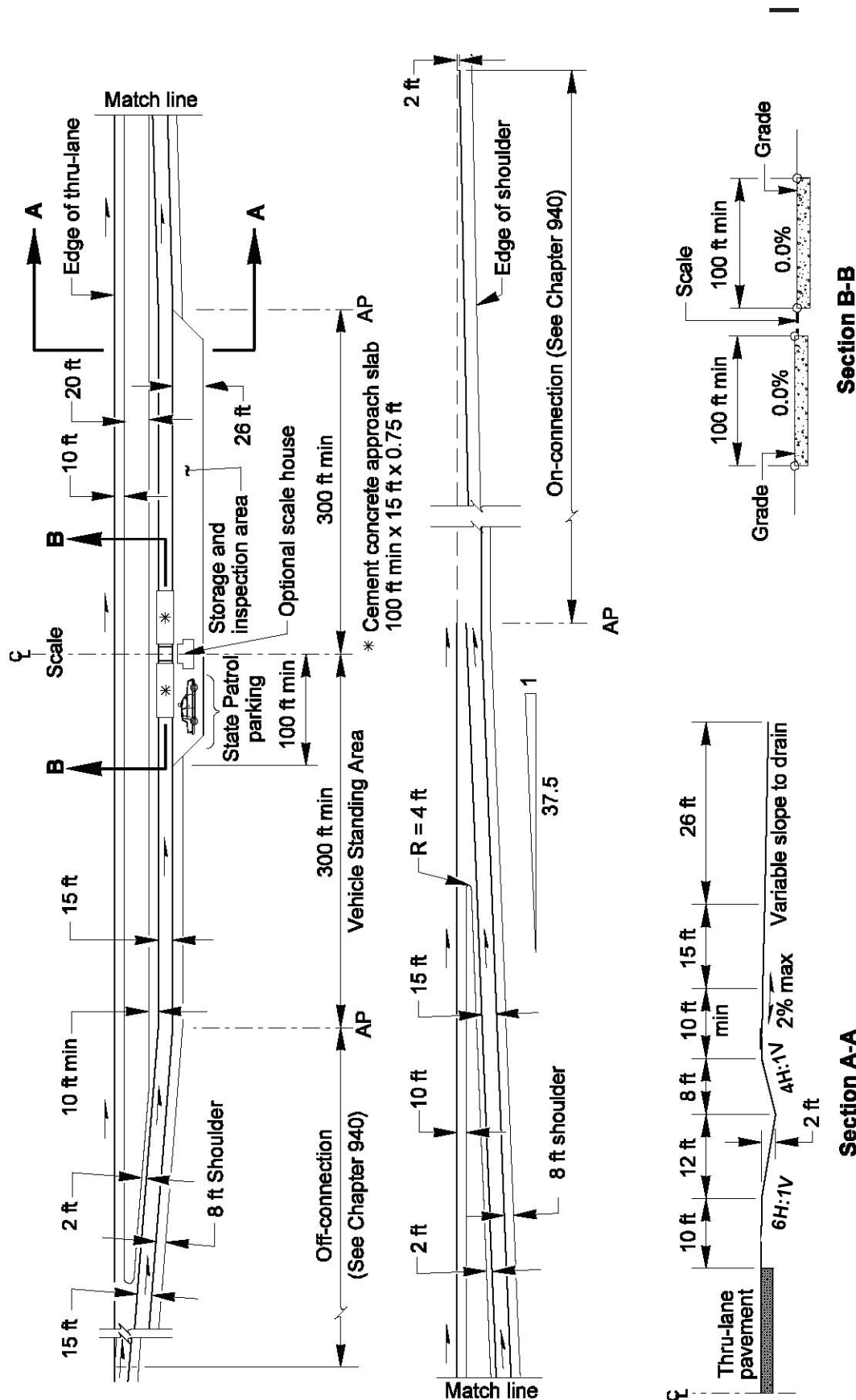
- Class of highway and design speed for main line (Chapter 440).
- Curve data on main line and weigh site.
- Numbers of lanes and widths of lanes and shoulders on main line and weigh site.
- Superelevation diagrams for the main line and weigh site.
- Stationing of ramp connections and channelization.

- Illumination.
- Signing.
- Water supply and sewage treatment.
- Roadside development.

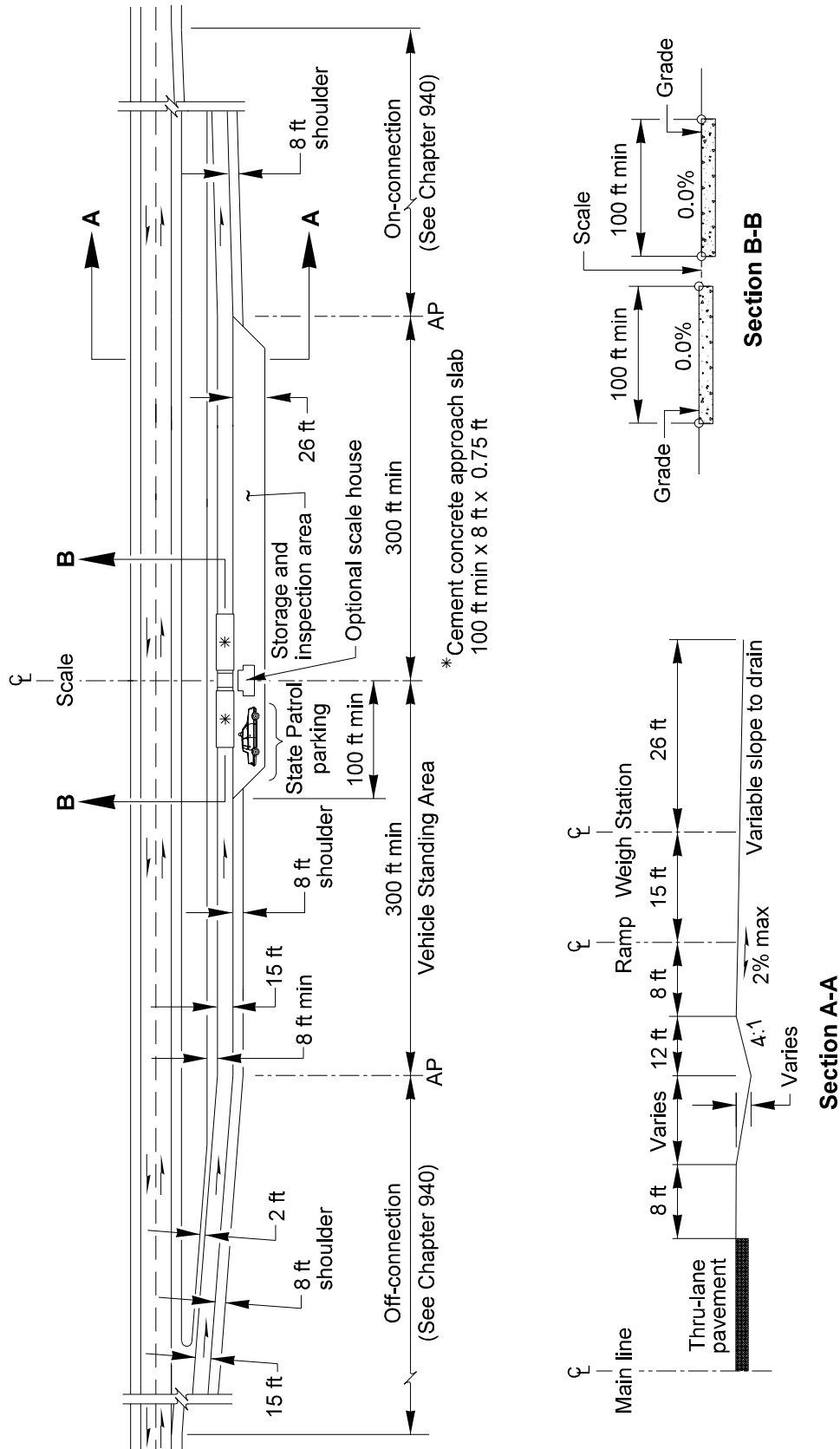
Get WSP approval of the site plans before the final plan approval.

1040.09 Documentation

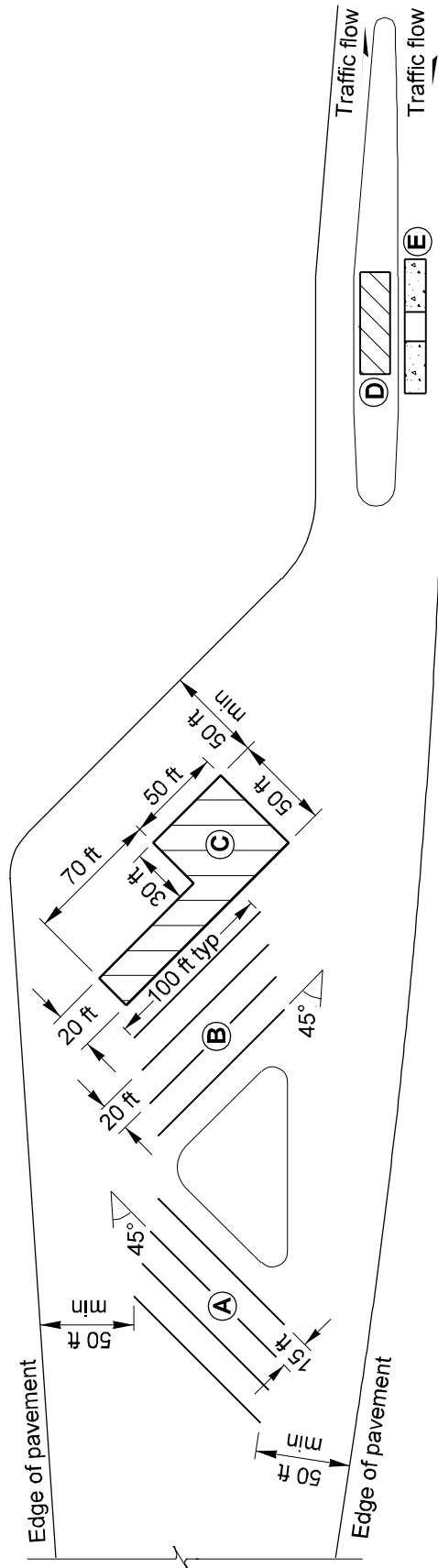
A list of documents that are to be preserved [in the Design Documentation Package (DDP) or the Project File (PF)] is on the following website:
<http://www.wsdot.wa.gov/eesc/design/projectdev/>



Truck Weigh Site (Multilane Highways)
Figure 1040-1

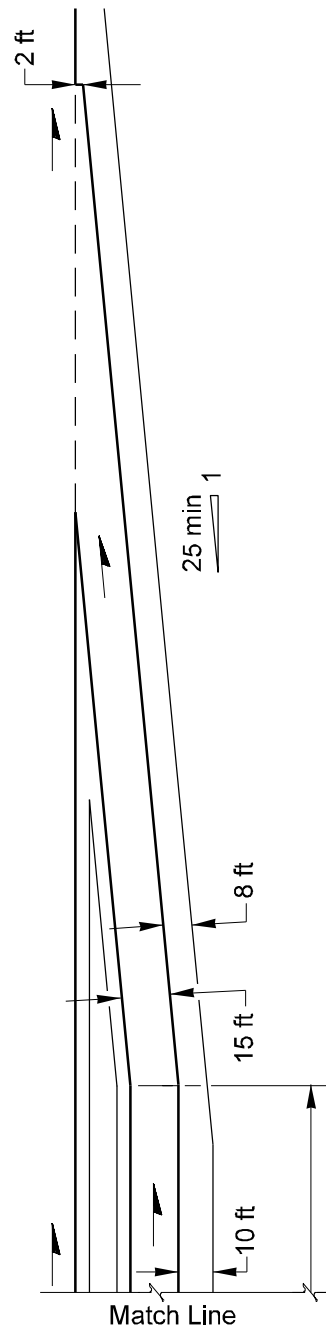
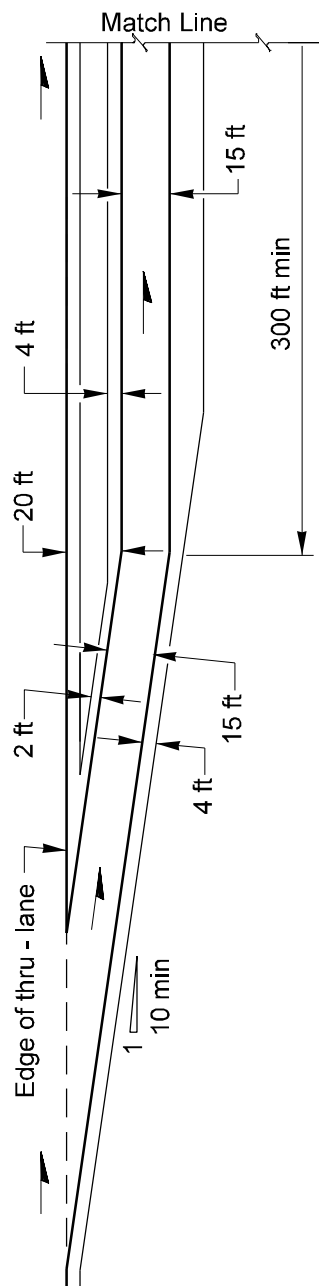


Truck Weigh Site (Two Lane Highways)
Figure 1040-2

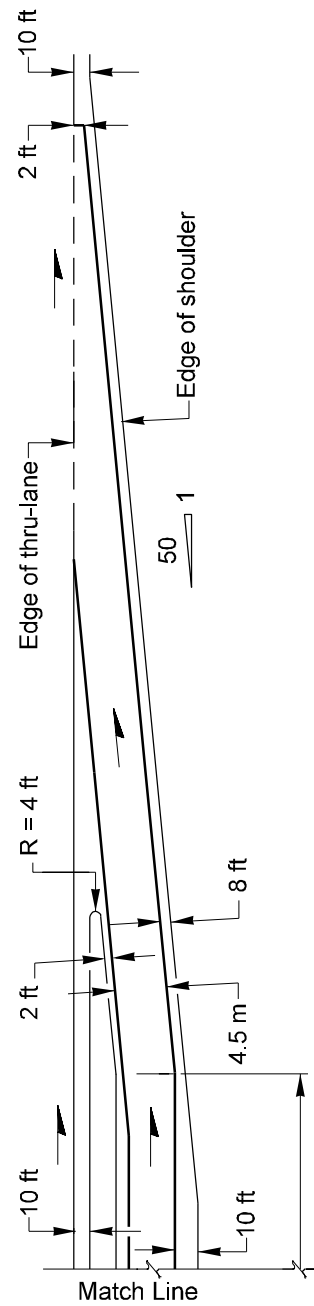
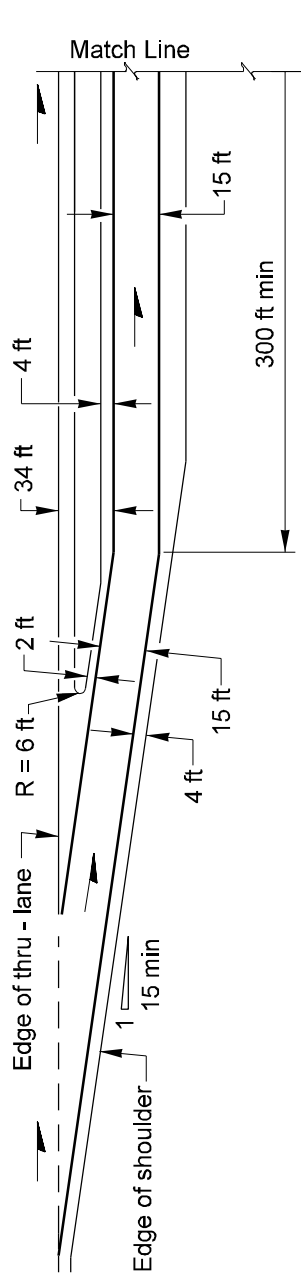


- Ⓐ Truck storage and parking
- Ⓑ Outside truck inspection and parking
- Ⓒ Truck inspection building
- Ⓓ Scalehouse
- Ⓔ Scale

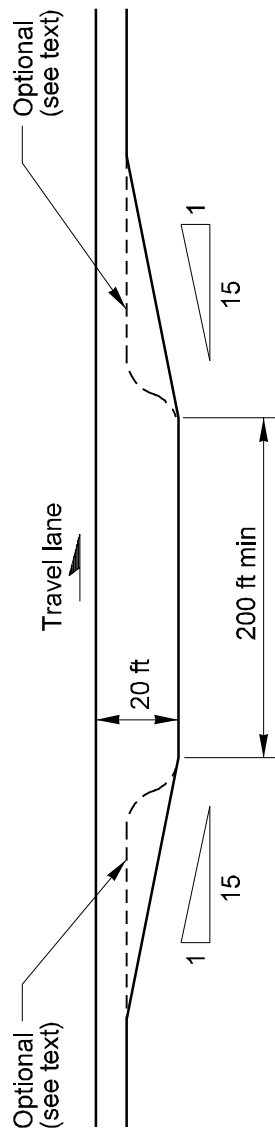
Vehicle Inspection Installation
Figure 1040-3



Minor Portable Scale Site

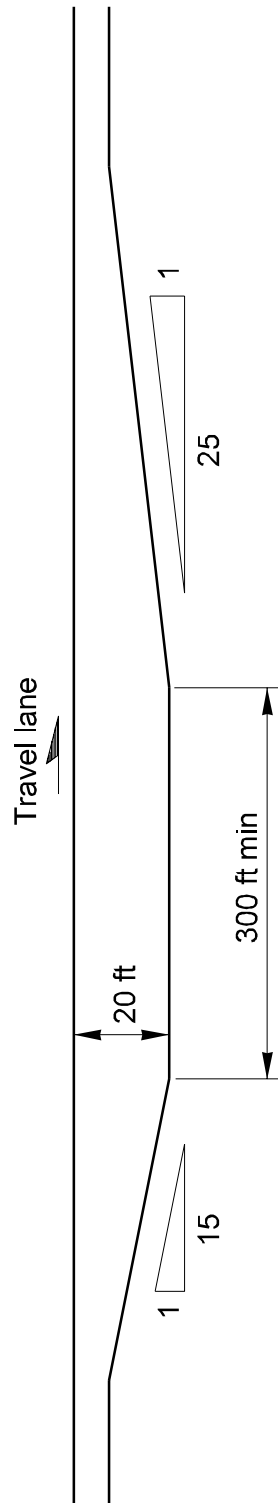


Major Portable Scale Site
Figure 1040-5



Length to be established by agreement with the WSP, but not less than 200 ft.

Small Shoulder Site
Figure 1040-6



Large Shoulder Site
Figure 1040-7

Memorandum of Understanding
Related to Vehicle Weighing and
Equipment Inspection Facilities on State Highways

This Memorandum of Understanding by and between the Washington State Department of Transportation hereinafter called the "Department of Transportation," and the Washington State Patrol, hereinafter called the "State Patrol," establishes procedures for coordinating and delineating the responsibilities for the location, design, construction, maintenance, signing, and other matters related to vehicle weighing and equipment inspection facilities and the state highway improvements needed as a result of these facilities.

It is mutually recognized that:

The Department of Transportation is responsible for planning, designing, constructing, and perpetuating public highways of the State Highway system for the safety and benefit of the traveling public;

The State Patrol is responsible for enforcement of the laws of the state of Washington regarding vehicle weight enforcement programs and vehicle safety inspection programs;

Nothing in this agreement is to be construed as conflicting with existing laws, regulations, and prescribed responsibilities, and

In recognition of the responsibilities, interest, and limitations set forth above and of the mutual benefits of established procedures to facilitate agreement on specific matters, the Department of Transportation and the State Patrol mutually agree as follows:

- I. Planning
 - A. The State Patrol will work with the Department of Transportation's Planning and Programming Service Center to develop a prioritized list of weigh station needs at each biennium. The list will include:
 - New permanent facilities
 - New portable facilities
 - Weigh-in-Motion (WIM) equipment
 - Vehicle inspection facilities
 - Scale approach slab construction
 - B. The State Patrol will provide the Planning and Programming Service Center with a project definition for each project, which will include statement of need, purpose of project, type of work, and general location of the project.
 - C. The Planning and Programming Center will send the information to the Regional Administrator for preparation of a project summary. The Regional Administrator will work with the State Patrol to identify the specific location of the facility, prepare a design decision estimate, and submit it to the Planning and Programming Service Center for inclusion in the biennial program.
 - D. The Regional Administrator will negotiate and execute any formal agreements required for design, construction, or maintenance of vehicle weighing and inspection sites.

**MOU Related to Vehicle Weighing and Equipment
Inspection Facilities on State Highways**

Figure 1040-8a

II. Responsibilities

Vehicle weighing and equipment inspection facilities shall meet highway standards for acceleration and deceleration lanes, on and off ramps, illumination, and other related equipment. These facilities will be provided through the cooperative efforts of the State Patrol and Department of Transportation as needed on state highways.

A. The State Patrol will:

1. Initiate the action and submit recommendations for the addition of a new facility or expansion of an existing facility or the relocation of an existing facility, and negotiate agreements, e.g. siting of a new facility, etc. with the Department of Transportation through the appropriate region and the Olympia Service Center.
2. Perform the preliminary engineering and submit the design and PS&E documents for the scale, WIM, scalehouse, and inspection facility to the Department of Transportation for review and processing for approval with the Federal Highway Administration (FHWA), if applicable, at the State Patrol's expense.
3. Construct, operate, and maintain the weigh station scale, WIM, scalehouse, and equipment inspection facility with all related equipment thereto including lighting, water, heat, telephone, and toilet facilities at the State Patrol's expense.
4. For WIM facilities and for facilities deploying Commercial Vehicle Information Systems and Networks (CVISN), select sites in cooperation with DOT that minimize the need for pavement reconstruction, and, at the State Patrol's expense, install, operate, and maintain any weigh-in-motion signs and related equipment, purchase and install all WIM hardware and software, and provide electrical conduit and an equipment storage room within the scale facility.
5. In the event the State Patrol cannot fulfill the responsibilities specified above for preliminary engineering (design and PS&E documents), construction, or maintenance, they may request that the Department of Transportation perform the work on the basis of a written agreement that includes reimbursement to the Department of Transportation for the costs.
6. Construct the CVISN roadside apparatus at the same time as WIM equipment is installed, e.g.; cantilevered mounting poles, guard rail, conduit/raceway installation at DOT expense. All construction in the state or interstate right-of-way will be under the responsibility of a DOT region engineer.

B. The Department of Transportation will:

1. Initiate action for the relocation of an existing installation when necessary because of the relocation of a highway or expansion of an existing highway, and obtain concurrence of the State Patrol.
2. Negotiate agreements with the State Patrol regarding addition, expansion, and relocation of facilities.

MOU Related to Vehicle Weighing and Equipment Inspection Facilities on State Highways

Figure 1040-8b

3. On all newly located or existing highways, at Department of Transportation expense, acquire the necessary right of way, construct and maintain the required acceleration and deceleration lanes, on and off ramps, driveways, passing lanes, scale approach slabs, and parking areas, including the surfacing thereof, excavate the scale pit, and construct and maintain the inspection, parking, and roadway illumination and standard signing at approved locations.
4. For WIM facilities and for facilities deploying Commercial Vehicle Information Systems and Networks (CVISN), at Department of Transportation's expense, construct the special approaches, provide maintenance of CVISN hardware and software located within the facility, and provide traffic control for installation of the scale and, when closure of any lane is required, for maintenance of the scale.
5. For facilities deploying Commercial Vehicle Information Systems and Networks (CVISN), at WSDOT's expense install mainline hardware (Automated Vehicle Identification equipment) and software for conformance with CVISN standards and provide maintenance of CVISN hardware and software located within the facility.
6. Upon request of the State Patrol, in accordance with a written agreement and on a reimbursement basis, perform other preliminary engineering, construction, and maintenance, which is the sole responsibility of the State Patrol.

Additionally, the State Patrol and the Department of Transportation agree to follow the Federal Highway Administration's *Guidance for Local Agency Roadway Projects within Interstate Rights-of-Way*, as outlined in Attachment A.

III. Conclusions and Approvals

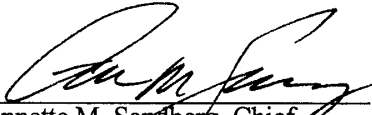
- A. The Regional Administrators for the Department of Transportation and the Commercial Vehicle Division Commander for the State Patrol are encouraged to consult with each other and to agree on such matters that fall within their scope of responsibility.
- B. This memorandum may be amended or supplemented by mutual agreement between the signers or their successors.
- C. Either party may terminate this MOU upon thirty- (30) days' written notification. If this MOU is so terminated, the terminating party shall be liable only for performance in accordance with the terms of the MOU for performance rendered prior to the effective date of the termination.
- D. In the event a dispute arises under this MOU, it shall be resolved as follows: The Secretary of WSDOT and the Chief of the WSP shall each appoint a member, not affiliated with either agency, to a conflict resolution board. Then these two members shall appoint a third member. The decision made by this board shall be final and binding on the parties to the MOU.
- E. In the event funding from state, federal, or other sources is withdrawn, reduced, or limited in any way after the effective date of this MOU and prior to normal completion, the WSDOT or WSP may terminate the MOU under the TERMINATION clause, subject to renegotiation under those new funding limitations and conditions.

MOU Related to Vehicle Weighing and Equipment Inspection Facilities on State Highways

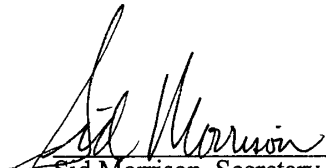
Figure 1040-8c

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F. We have read the foregoing and agree to accept and abide by the procedures herein.

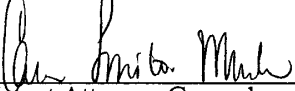

Annette M. Sandberg, Chief
Washington State Patrol

12/16/99
Date

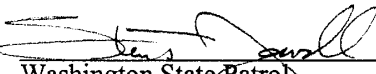

Sid Morrison, Secretary
Washington State
Department of Transportation

3/9/00
Date

APPROVED AS TO FORM:


Assistant Attorney General

9/7/99
Date


Washington State Patrol
Budget and Fiscal Services

12/27/99
Date

**MOU Related to Vehicle Weighing and Equipment
Inspection Facilities on State Highways**

Figure 1040-8d

ATTACHMENT A
Guidance for Local Agency Roadway Projects within Interstate Rights-of-Way

Since all projects within the Interstate rights-of-way (ROW) have the potential to impact safety and operations on the Interstate route, they must incorporate Interstate design criteria and construction quality. It is the Federal Highway Administration's (FHWA) policy that the Washington State Department of Transportation (WSDOT) should administer all projects within the Interstate ROW. However, given the scope and extent of non-Interstate projects within the Interstate ROW, it is recognized that local agency administration of some projects may be desirable.

Whenever a local agency proposes a project within the Interstate ROW, they must develop an agreement with WSDOT that clearly outlines their duties and responsibilities to maintain the integrity of the Interstate facility, from both the safety and quality perspectives. The agreement must be executed prior to beginning design and must incorporate the following requirements:

Responsibilities: WSDOT and the local agency must each assign a responsible Project Engineer.

Design: WSDOT must review and approve all highway plans, profiles, deviations structural plans false-work plans, shoring plans, and traffic control plans for any work within the Interstate ROW.

Plans, specification and estimates: WSDOT must review and approve the plans and specifications for any work within Interstate ROW.

Advertising and aware: The local agency must confer with the WSDOT Project Engineer on any pre-aware issues affecting the quality and timing of the contract.

Construction: All construction, materials, and quality control requirements contained in the current editions of the WSDOT Standard Specifications and Construction Manual must be incorporated into the agreement.

Contract changes: All contract changes affecting work within the Interstate ROW must have the prior concurrence of the WSDOT Project Engineer.

Final inspection: The final inspection of the project must be performed by WSDOT Olympia Service Center and must evidence their approval.

Only local agencies with full certification acceptance authority may enter into such an agreement with the WSDOT.

The agreement must be submitted to FHWA for approval. FHWA reserves the right to assume full oversight of the project.

**MOU Related to Vehicle Weighing and Equipment
Inspection Facilities on State Highways**

Figure 1040-8e

